

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number  
**WO 2005/002500 A2**

(51) International Patent Classification<sup>7</sup>:

A61K

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(21) International Application Number:

PCT/US2004/011210

(22) International Filing Date: 12 April 2004 (12.04.2004)

(72) Inventors; and

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/463,100	14 April 2003 (14.04.2003)	US
60/467,190	30 April 2003 (30.04.2003)	US
60/478,860	16 June 2003 (16.06.2003)	US
60/479,430	18 June 2003 (18.06.2003)	US
60/479,429	18 June 2003 (18.06.2003)	US

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(54) Title: INHIBITORS OF CORONAVIRUS

1 MFIFLLFLTLTSGSDLDRCCTTFDDVQAPNYTQHTSSMRGVVYYPDEIFRSD  
51 TLYLTQDLFLFFYSNVGTGHTINHTFGNFVFPKDGIFYAATEKSNVVRG  
101 WVFSGTMNNKSQSVIIINNSTNVVIRACNFELCDNPFPAVSKPMGTQHT  
151 MIFDNAPNCTFEYISDAFSLDVSEKSGNFKHLRFVFKNDGFLYVYKGY  
201 QPIDVVRDLPSGFNTLKPIFKLPLGINITNFRAILTAFAQDIWGTSA  
251 AYFVGYLKPTTFMLKYDENGITDAVDCSQNPLAELKCSVKSFEDKGIY  
301 QTSNFRVVPSPGDVVRFPNITNLCPPEVFNATKFPVSVAWERKKISNCVA  
351 DYSVLVNSTFFSTFKCYGVSATKLNLDLCPNSVYADSFVVGDEVRQIAPG  
401 QTGVIAADYNKLPDDFMGCVLAWNTRNIDATSTGNVNYKYRYLRHGKLRP  
451 FERDISNVVPSPDGPKCTPPALNCYWPLNDYGFYTTTGIGYQPYRVVLS  
501 FELLNAPATVCGPKLSTDLIKNQCVNFNFNGLTGTGVLTPSSKRFQPFQ  
551 PGRDVSDFDTSVRDPKTSEILDISPACFGGVSVITPGTNASSEVAVLYQD  
601 VNCTDVSTAIHADQLTPAWRIYSTGNVFPQTQAGCLIGAHEVDTSEYCDI  
651 PIGAGICASYHTVSLRSTSQKSIVAYTMSLGADSSIAYSNNTIAIPTNF  
701 SISITTEVMPVSMARKTSVDCNMYICGDSTECANLLQYGSFCTQLNRALS  
751 GIAAEQDRNTRREVFAQVKQMYKTPTLKYFGGFNFSQILPDPLKPTKRSFI  
801 EDLLFNKVTLADAGFMKQYGECLGDINARDLCAQKFNGLTVLPPLLTDD  
851 MIAAYTAALVSGTATAGWTFGAGAAQIPFAMQMAYRFNGIGVTQNVLYE  
901 NQKQIANQFNKAI SQIQESLTTTSTALGKLQDVVNQNAQALNTLVKQLSS  
951 NFGAISSVLNDILSRDLKVEAEVQIDRLITGRLOSLQTYVTQOLIRAAEI  
1001 RASANLAATKMSECVLGQSKRVDFCCGKYHLMSPQAAPHGVVFLHVTYV  
1051 PSQERNFTTAPACHGKAYFPREGVVFVNGTSWFITQRNFFSPQIITTD  
1101 NTFVSGNCDVVIGIINNVTYDPLQPELDSFKEELDKYFKNHTSPDVLGD  
1151 ISGINASVVNIQKEIDRLNEVAKNLNBSLIDLQELQKYEQYIKWPWYVWL  
1201 GFIAGLIAIVMTILLCCMTSCCCLKGACSCGSCCKFDEDDSEPVKGV  
1251 KLHYT

(57) Abstract: The present invention relates to inhibitors of coronaviruses including severe acute respiratory syndrome (SARS); methods of identifying inhibitors of coronaviruses; methods and compositions useful for therapy (treatment, or prevention) of coronavirus infections. The coronavirus inhibitors target different regions of the coronavirus Spike protein to inhibit coronavirus replication. In particular embodiments, the inhibitors include Five-Helix proteins, HR2 peptides, HR1 peptides, HR1 chimeric peptides. The present invention also features retro-inverso analogue of the coronavirus inhibitors, coronavirus inhibitors containing one or more tryptophan analogs, and / or one or more lactam bridges.



(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— without international search report and to be republished upon receipt of that report

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